1. 9504785

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French patent translation

Patent # 9504785 from Zanussi (Elettrodomestici S.P.A.)

Fridge with improved shelving.
The invention involves a fridge, more specifically from the commercial market, which has one or more areas to preserve food products.
These areas are divided in several horizontal shelves held in place from the sides or back.
The so called shelves are held by "cornices" and, will insert through their sides in corresponding cavities located in the so-called cornice. The so called cornice presents several inside protrusions which will engage in the side of the shelves. Fluting, parallel to the respective sides, covert the sides of the shelves; the inside protrusions of the cornice are made to clip in the fluting.
Application: appliance.

Page 1:
The invention involves improved shelving for a fridge with at least on opening for food preservation.
In order to keep it simple, the description will refer to a fridge with one opening, but, obviously, the invention can be extended to fridge and/or freezer having several openings and corresponding shelving.
We know about horizontal shelving inside the opening, which are used to store food. This shelving has the double function of delimit vertically the different compartment and allow storage of the different food.
We know, through the user model DE-GM 90 04 180 and DE-GM 90 06 513, shelving, especially in glass, where the sides are covered by cornices made in plastic through injection molding.
The cornices are built as a continuous frame, which encloses the corresponding shelve, and, beside an esthetic function, have essentially the function of forming the holding element of the corresponding shelving against the support installed and placed along the side of the opening, and also the function to protect the sharp edges of the corresponding glass shelves.
Such a construction is safe and warranties the fixation between the cornices and the shelves, but present the inconvenient that the molding step through injection is relatively expensive compare to the moderate value of the shelve; furthermore, in case of a break on one side of the shelve, it is necessary to replace the whole shelve because of irremovable link between the shelve and the corresponding cornices.
Page 2:
Therefore, it would be preferable, and it is the goal of the actual invention, to create a domestic fridge having at least one opening for food preservation and containing several shelves, which can be built in a cheaper way and where the shelves can be disassembled at will.
This goal is reached with a fridge, especially for domestic use, having several opening for food preservation, where the so-called openings are divided in several horizontal shelves supported on the side and/or in the back. The so-called shelves having plastic cornices

and are held by these cornices which are separated and applied to the shelves by inserting the sides of the shelves in the corresponding cavity of the cornices characterized by the fact that the cavity have several interior protrusions made to engage the sides of the shelves.

Pending on the production process, the top and/or bottom sides of the cornice's cavity will have interior protrusions curved towards the inside. These protrusions will clip on the corresponding side of the shelve.

Close and parallel to the side of the shelves, fluting are created on the shelves and the so-called cornice's protrusions will clip-on the corresponding fluting.

The so-called cornices are shaped in "L" and are made to hold the shelves on the corresponding supports.

Page 3:

The so-called cornices are doted with several cavities, preferably cylindrical, made to receive corresponding buttons sticking slightly out on top and on the side. The so-called buttons are made in a non-skid material, preferably rubber.

Other characteristics and advantages will appear in the following description of a specific type of shelve and cornice given as a non-limiting example based on the attached drawings of which:

Fig 1 and 2 represent respectively the side section and the partial front view of 2 cornice according to the invention.

Fig. 3 represents the side section of a variation of the cornice according to the invention.

Fig. 4 represents a top view of the shelve before the mounting of the cornice according to the invention.

Fig. 5 and 6 represent at a larger scale a side section and a top view of the shelves from fig.4.

Fig. 7 and 8 represent respectively a top view and a front view of the non-skid buttons.

Looking at fig. 1 and 2, we note that they mainly regard the realization of several removable cornices 1 equipped with cavities 2 in which are pushed in the sides 3 of the shelve 8.

Page 4:

The cavities are equipped on the inside edge 4 with several interior protrusions 5 formed as one single piece with the cornice as shown in fig. 1.

The cavity is sized as to be able to receive in a tight fit the respective shelve, so that although the presence of protrusion 5 consist in a hindrance to the insertion of the cornice, it will, after insertion, create a pressure and therefore a friction between the cornice and the shelve which will prevent the accidental disassembly of the elements. An advantageous configuration of the actual invention is represented in fig 3, which shows the interior protrusion5 being obtained by folding towards the inside one of the sides (top or bottom) of the cavity 2.

3. 9504785

This way, the work of the cornice is simplified and the holding efficiency of the protrusion is increased, since the protrusion covers the length of the cornice and therefore it performance is optimum.
We obtain an espccially efficient variation of the actual invention when the shelves, particularly if they are made of glass, are equipped with fluting 7 along the sides where the cornices are inserted; the fluting is shaped, sized and placed so that they allow the placement and therefore the clip-on of the protrusions as shown in fig. 4, 5 and 6.
This way, the insertion force of the cornice is not increased, whereas the disassembly effort is greatly increased. Another benefit of the invention is that the creation of such fluting, particularly on glass and oriented lengthwise, is very cheap since they would be realized during the edging of the shelve.
Page 5:
Another benefit of such a construction is that any cornices can be built in "L-shape" as the top cornice shown in fig.2
This way, the lateral side of this cornice can interfere with a corresponding stop, non represented, placed at half-way up the shelve, as to prevent the forward motion and possible fall of the shelve.
Looking at fig. 2, we can improve the actual invention if we create several cavities, preferably round, inside the cornice and corresponding to the lateral sides.
In these cavities, buttons 11, represented in fig 7 and 8, which protrude slightly on their top 12 and their sides 13, will be inserted. The buttons are made off a non-skid material, preferably rubber, and their used to create an obstacle to the forward motion and fall of the shelves from the support by the friction created by the protrusion in the areas 12, 13 of the buttons 11.
Of course the shelving can be realized in different fashion as these shown, though without leaving the spirit protected by the current invention.

Page 6: CLAIMS

1. Fridge, especially for domestic use, having several opening for food preservation, where the so-called openings are divided in several horizontal shelves supported on the side and/or in the back. The so-called shelves having plastic cornices (1) and are held by these cornices which are separated and applied to the shelves by inserting the sides (3) of the shelves in the corresponding cavity (2) of the cornices characterized by the fact that the cavity have several interior protrusions (5) made to engage the sides of the shelves.
2. Refrigerator in accordance to claim 1 characterized by the fact that the top and/or bottom sides (6) of the cornice's cavity will have interior protrusions (5) curved towards the inside. These protrusions will clip on the corresponding side of the shelve.
3. Refrigerator in accordance to claim 1 characterized by the fact that close and parallel to the side of the shelves, fluting (7) are created on the shelves and the so-called cornice's protrusions will clip-on the corresponding fluting.
4. Refrigerator in accordance to any of the previous claims characterized by the fact that the so-called cornices are shaped in "L" and are made to hold the shelves on the corresponding supports.

4. 9504785

5. Refrigerator in accordance to any of the previous claims characterized by the fact that the so-called cornices are doted with several cavities, preferably cylindrical, made to receive corresponding buttons sticking slightly out on top and on the side. The so-called buttons are made in a non-skid material, preferably rubber.